



**Dr. D. SHARMILA**

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## ACADEMIC DETAILS

**2011- 2016:** Ph.D. (Organometallic Chemistry) from **Indian Institute of Technology, Madras**

**2008- 2010:** M.Sc. (Organic Chemistry) from S.K. University, AP with **77.8%** (University **1<sup>st</sup> Rank**)

**2005- 2008:** B.Sc. (Chemical Sciences) from S.V. University, AP with **86.2%** (University **1<sup>st</sup> Rank**)

## DOCTORAL DETAILS

- **Disseratation** : Synthesis and Characteisation of Trimetallic Triply Bridged Borylene Complexes
- **Supervisor** : Prof. Sundargopal Ghosh, Indian Institute of Technology, Madras, India.

## PROFESSIONAL DETAILS

- 2016- 2017 :** Assistant Professor (Contractual) in **Central University of Karnataka.**
- 2018- 2023 :** Jr. Lecturer In **Aeronautics College, Sunabeda.**
- 2023- present:** OPSC Grade-1 Assistant Professor, **DAV College, Koraput. (Joining in Aug 2023)**

## **AWARDS and HONORS**

- **Gold medal in BSc Chemistry during the year 2005-2008.**
- **University Topper** in M.Sc. (Organic Chemistry) 2010 at S.K. University, (SKU), Anantapur.
- Completed internship at **IGCAR, Kalpakkam** and learnt & studied about housing instruments like mass spectrometer, high performance liquid chromatography instrument, atomic absorption spectrophotometer, fluorimeter, thick & thin layer sensors.
- Made industrial visits to Madras Atomic Power Station, Nuclear Desalination Demonstration Plant and the Fast Breeder Test Reactor.
- Secured **AIR 32<sup>nd</sup> rank** in CSIR-JRF – 2011 (with Registration no- 100537)
- Junior Research Fellowship (JRF-CSIR), CSIR-UGC, India, 2011.
- Senior Research Fellowship (SRF-CSIR), CSIR-UGC, India, 2014.
- Best Oral Presentation Award received from **Noble Laureate Prof. Lehn** in **CCC-2013**, Chennai.
- Given Flash poster presentation given in **Euroboron 6** Conference. **Poland.**

## **RESERCH INTERESTS:**

- **Synthesis of main group organometallics compounds for desire application.**
- **Electron Deficient Compounds for Chemo Sensors and OLEDs**
- **Supramolecular Chemistry-Host Guest Chemistry**
- **Bioinorganic Chemistry and Photodynamic Therapy**
- **Synthesis of Organic and Organometallics Molecules.**

#### **RESEARCH HIGHLIGHTS and HANDLING INSTRUMENTS:**

- **Expertise in design and execute multi-step synthesis of targeted organic and organometallics bioactive molecules.**
- **Handling of moisture sensitive reagents such as n-BuLi, LAH, DIBAL-H, NaBH<sub>4</sub>, Wittig reaction, Click reaction etc., and carrying reactions at low temperature as well as at high temperatures.**
- **Endured in purification of products in minor amounts.**
- **Adopt in analyzing spectrographic data like <sup>1</sup>H & <sup>13</sup>C NMR, GC, GC-MS, IR and ESI-MS**
- **Working knowledge in most of the chemical databases (Chem Draw, ISIS Draw, and Scifinder) and basics in computers.**
- **Handing several synthetic and analytical instruments such as Schleck line and Glove box,**
- **Single Crystal X-ray Diffraction, Multinuclear NMR (300, 400, 500 MHz), Cyclic voltammetry, UV-Visible Spectroscopy , Fluorescence Spectroscopy, Integrating sphere for calculating solid state PL quantum yields, Infra-red Spectroscopy.**

## • EXPERIMENTAL SKILLS

- Single crystal X-ray diffractometer (Oxford XtaLAB Synergy-S) (four-year experience)
- Synchrotron MX1 and MX2 beam lines for single crystals (four year experience) .
- FT-NMR spectrometer (Bruker Avance III 400 and 600 MHz) ; GC/MS analyses (Agilent 6890 GC)
- FT-IR (Jasco, Agilent Cary 630) ; Cyclic voltammetry (CH instruments)
- UV-Vis spectrophotometer (Jasco V-650, Evolution 300-Thermoscientific)
- Standard Schlenk line and glove-box techniques for inert atmosphere reactions
- Vacuum distillation and sublimation.

## PUBLICATIONS LIST

**Papers Published in International Journals: 8**

**Conference Papers: 2**

1. Synthesis and characterization of N-Phenyl Pyrrole Anchored to Fischer Carbene Complex Through Ring Closing Metathesis Oxidative Aromatization: Synthesis and Characterization of Aryl Substituted Fischer Carbene Complexes : R. Ganesamoorthi, A. Thakur, **D. Sharmila** and S. Ghosh, *J. Organomet. Chem.*, **2013**, 726, 56.  
(Cited by – **3 journals**, 1. Coordination Chemistry Reviews **2015**, 286, pp. 30-150; 2. Organometallics **2014**, 33(22), pp. 6593-6603; 3. Organometallics **2014**, 33(12), pp. 3096-3107.)

2. Novel Heteronuclear Bridged-Borylene Complexes Derived from  $[\text{Cp}^*\text{CoCl}]_2$  and Mono-Metal Carbonyl Fragments ( $\text{Cp}^*=\eta^5\text{-C}_5\text{Me}_5$ ): **D. Sharmila**, K. Yuvaraj, S. K. Barik, D. K. Roy, K. K. Chakrahari, R. Ramalakshmi, B. Mondal, B. Varghese, S. Ghosh, *Chem. Eur.J.*, **2013**, *19*, 15219.  
(Cited by – **1 journals**, 1. *Chem. Eur.J.*, **2015**, *21* (13), pp. 5074-5083)
3. Hypoelectronic Metallaboranes: Synthesis, Structural Characterization and Electronic Structures of Metal-Rich Cobaltaboranes: K. K. V. Chakrahari, **D. Sharmila**, S. K. Barik, B. Mondal, B. Varghese and S. Ghosh, *J. Organomet. Chem.*, **2014**, *749*, 188.  
(Cited by – **3 journals**, 1. Dalton Transactions 2014, *43* (45), pp. 17184-17190; 2. Dalton Transactions **2014**, *43* (26), pp. 9976-9985; 3. Journal of Cluster Science **2014**, *25*(1), 225-237.
4. Synthesis, Characterization and Electronic Structures of Rh and Co analogs of Decaborane-14: S. K. Barik, D. K. Roy, **D. Sharmila**, R. Ramalakshmi, K. K. V. Chakrahari, S. K. Mobin, S. Ghosh, *Proc. Natl. Acad. Sci. India*, **2014**.  
(Cited by – **1 journals**, Dalton Transactions **2014**, *44* (2), pp. 669-676)
5. Synthesis, Characterization and Crystal Structure Analysis of Cobaltaboranes and Cobaltaheteroborane: **D. Sharmila**, R. Ramalakshmi, K. K. V. Chakrahari, B. Varghese and S. Ghosh, *Dalton Trans.*, **2014**, *43*, 9976.  
(Cited by – **2 journals**, 1. Pure and Applied Chemistry **2015**, *87*(2), 195-204; 2. *Chem. Eur.J.*, **2015**, *21* (13), pp. 5074-5083)
6. Dimetallaheteroborane clusters containing group 16 elements: A combined experimental and theoretical study: K. K. V. Chakrahari, R. Ramalakshmi, **D. Sharmila**, and S. Ghosh, *J. Chem. Sci.*, **2014**, *126*, 1597.  
[Invited article for a special issue on the occasion of the chemical crystallography]
7. First-row Transition Metal-Diborane and Borylene Complexes: **D. Sharmila**, B. Mondal, R. Ramalakshmi, S. Kundu, B. Varghese and S. Ghosh, *Chem. Eur. J.*, **2015**, *21*, 5074.

8. Reactivity of cyclopentadienyl transition metal (II) complexes with borate ligands: structural characterization of the toluene-activated molybdenum complex., R. Ramalakshmi, K. Maheswari, , **D. Sharmila**. Anamika Paul, Thierry Roisnel, Jean – Francois Halet, and S. Ghosh, *Dalton Trans.*, **2016**, 45, 16317.

## TEACHING EXPERIENCE - 5 Years

- Mentored post-graduate and honours undergraduate students.
- PG / UG Inorganic lab.
- Taught UG and PG (6 credit) Courses.

## PERSONAL DETAILS

**Date of Birth:** 10/08/1987  
**Nationality:** Indian  
**Marital Status:** Married  
**Spouse name:** Komali Dowlath Anwar (Manager HAL)  
**Permanent Address:** D.No- 2/944-2, Jayanager Colony,  
Tadipatri. A.P